A QUEER COLLECTION OF SPOOK CURIOS ON EXHIBITION.

Spiritualists of All Kinds From All Parts of the World-Plaster Casts and Pictures Made by Spirits-Strange Exhibition of Magic by Alssaouas from Upper Egypt,

Paris, Oct. 18.-Never in a civilized land has a more curious gathering come together for a stranger purpose than the International Congress of Spiritualists and Occultists at the Exposition. Occultists from every country in Europe, from the two Americas and from the near East and the far East are here met to exchange weird experiences and give one another new proofs of the connection between the material and the spiritual world. The United States were represented in great numbers.

The cosmopolitan character of the congress gave its proceedings an unwonted comprehensiveness. No question which has ever been raised by initiates or students anywhere at any time in any language was neglected. Hypnotism, table-turning, dreams, ghosts, the summoning of spirits, presentiments, faith healing, astrology, alchemy, clairvoyance, prophecy, the hermetic mysteries, the powers of symbols-all these things and many kindred to these were the subject of lecture and discussion. The big volume in which will be published the proceedings of the congress will mark an epoch in occult research—the summing up of what has been thought and arrived at by the close of the century, the start-

ing point for investigation in the future. But for the normal man-the man who is quite sure whether he believes in any of the spiritualistic theories, and at any rate, does not greatly care to trouble himself about them except for the harmless amusement or excitement they may procure him the point of greatest interest in the building devoted to the occultists was the Musée Spirite. This spiritualistic museum is perhaps the first of its kind known in the history of the movement it was certainly the largest and most inclusive. It contained, on long tables, round which continually buzzed an animated crowd of devout believers, an odd collection of objects, gathered from every part of the world, tending to prove the reality of spirit phenomena

One was an assortment of plaster casts, in which may be dimly traced resemblance to the human face, generally distorted in a witchlike expression, or a knotted human hand, generally having the appearance of clutching at some unseen object. These moulds, as the amiable and perhaps slightly credulous founder of the museum explains, are taken from impressions made at séances by spirit presences. Prof Chiala of Naples quarantees them. explains that whenever he had a good medium he begged her to ask the spirits to leave a visible token of their visit by passing their incorporeal faces or hands over a gelatine composition carefully prepared for that purpose The spirits in most cases politely obliged. The next day the professor would go to work in his laboratory making casts from the gelatine.

The display is certainly curious, but not, after all, very convincing. A clever operator could readily enough fake the moulds. Besides, we are told that the medium was the notorious Eusapia Paladino, who has een detected more than once in the most flagrant trickery. is true that W. T. Stead says that though Eusapla some imes cheated, she has also very often performed under strict test conditions feats which cannot be explained away. But anything she has to do with remains open to suspicion. All the same, the bulk of the people who haunt the Musée Spirite accept the casts with childlike faith-a fact which makes the ordinary man feel that spiritualists are not always quite so careful as they ought to be. Curious also are the drawings and paintings

said to have been executed under spiritual guidance, which litter the tables and cover These sometimes represent human faces and figures in various strange poses and with odd accompaniments of flaming aureoles or other fantastic unhuman additions Sometimes they consist merely of decorative designs utterly devoid of any apparent significance. One of the pictures is authenticated by Princess Karadia of Stockholm, who writes: "This picture, which I take to represent John the Baptist, was drawn by my hand the dark in five minutes while I was under most helped me in my life. In my normal condition I am not an artist." Nor, by the evidence of the picture, would the princess appear to be an artist under spiritual influence.

Sometimes work supposed to have been executed under unearthly guidance has a cerbe done in an opium dream, but in no single road might be made from the Pacific Ocean seem to have the peculiarity of being able to him. Among the pictures on the walls of the lant Musée Spirite are some crayon drawings shown by M. Desmoulins, well known in Paris as an | the etcher, whose admirable work won him his Ve decoration as an officer of the Legion of ited Honor. Yet this accomplished artist, exhibits | cov spirit guidance. It is certain that before he tempt. His delusion reminds one of the case of Luther R. Marsh, the brilliant New York tains, and although they sought diligently lawyer who fell under the spell of the fraudu- they failed to find it. lent medium, who chose to call herself Madame It is pitiable none the less to see so able an artist

suffering from such delusions. Most of the purely decorative designs at the Musée Spirite are the work of a silk weaver of Lyons, a poor man, named Darmedru, who, it is said, has not had the slightest artistic education Except when, as he says, the spirit moves his hand, he himself remaining In a state of semi-unconsciousness, he cannot draw the simplest object or invent any decorative plan. He believes that his guiding influence is his son, who died at the age of 20 while a student at the City Art Schools. The young man, according to the father and mother, sends them every day communications from the other world, both by means of table and by guiding the mother's hand to write. Mme. Darmedru is a woman of ordinary public school education; she finds a certain difficulty in composing a letter on the ordinary affairs of life: but when her dead son, as she believes, guides her hand she fills sheet after sheet without difficulty. These messages consist mostly of spiritual instruction and advice and affectionate reminiscences.

In connection with the congress there were given various séances exhibiting phases of practical occultism. One Sunday there was a mass meeting of all the sections in the vast general assembly hall to witness a demonstration of thaumaturgy by a troupe of Aissaouas from the Exposition. These are members of Moorish-Arab tribes who continue in upper Egypt the traditions of practical occultlong ago learned from the mystics of the remote Indian Peninsula. And truth to tell, their exhibition that day at the congress was very extraordinary, eminently calculated to send the most convinced sceptic home wondering. These Aissaouas are commonplace looking

the most convinced sceptic home wondering. These Aissaouas are commonthace looking persons in the normal state, except for their oriental costumes. But while they are engaged in doing their stunts they become formidable. On the floor before them, as they crouch, a small censer sends up smoke clouds of heavy perfume, which is supposed to intoxicate the performers to the wonder-working point.

As the thick clouds of fragrant blue smoke arise an extraordinary change comes over the fakirs. The musicians begin a low, plaintive Eastern sing-song, beating time upon their instruments; in a few moments they are shouting at full voice a wild, rapid, guttural chant and banging their drums in a kind of frenzy. The barbaric music seizes the audience too; one sees that people are turning pale and half rising in their seats, as if under the impression of some strange enchantment; one hears women giving theat peculiar kind of half groan, half scream, that

OCCULTISTS IN PARIS: the negroes of the South emit at a religious revival. And all the while the fakir who is to show forth the wonderful powers of his tribe is whirling to the music in a mad, irregular dance that absolutely fascinates one's gaze His condition increases every second: he foams at the mouth, yells like a lunatic and every now and then flings himself over to the censer to drink in through the nostrils and mouth great draughts of the heavy, colling smoke.

There comes a moment when he seems like a being of another world, some world where madness reigns supreme. His eyes are starting out of his head, his veins stand out like strong blue cords on his forehead and on his bare arms and chest. He bites savagely at the floating ends of his long robe and all the time he whirls and yells, bounding over the platform like a panther. Then he is ripe for his experiment: he is incapable of feeling pain. A groan f horror goes up from the whole audience as he flings himself upon a basketful of venomous snakes, plunges his arm in, clutches a mass of the coiling, slimy serpents, flings them all about him, stuffs them into his mouth, biting them savagely, and rolls himself over among them in an uncontrollable fury. It is disgusting and many people in the audience go out horrifled and sick, but it is fascinating all the same. They return for the next experience

This time it is the two musicians who give an exhibition, while the snake dancer, after drinking some potion to calm his nerves, returns to prove to the audience that he has not been harmed by the snakes he has handled so violently in his drunken frenzy, though, by way of parenthesis, it would be a remarkably courageous snake that would have presence of mind enough to defend itself against the attacks of a being in such a state of furious dementia.

The musicians repeat the extravagant contortions with which the first performance began. They bang their instruments with an intensity that increases every moment and constantly they inhale the heavy per-Suddenly, when the desired fury has fume. seized them in turn, they fling away their tambourines, and, yelling like demons, bound all over the platform, snatching up different veapons which lie littered over the floor. One of them thrusts a danger full into his eye and leaves it sticking there while he capers about singing what one might take for a chant of victory of some tribe of savage warriors. The other transfixes his tongue with four slimbladed strictios and immediately afterward jabs a long knife, apparently at random, into his abdomen. It seems, as they do these things. that they feel an intense need of some violent physical sensation to counteract the exalted mental state into which they have brought themselves. A long gurgle of satisfaction followed always on the inthrust of the weapon

The last act was perhaps still more curious One of the men took a long, stout nail with a sharp point, placed it over the top of his skull, hen beat it hard in with a heavy wooden block. He rose suddenly, as if in convulsions, and careered around the stage for several minutes with the nail sticking out of his head, while his comrades pounded their tambourines and raised the roof with a loud, sonorous song Finally the man sank down, exhausted His dark bronzed skin had turned to a sickly green and his eyes glittered strangely. A young member of the congress pulled the nail from his head. It came out with difficulty and the blood spurted. One of the troupe then made passes over the head and breathed on the spot When he withdrew there was only a slight roughness on the skin of the scalp to show where the nail had been.

The writer asked the secretary of the congress what, in sum, all these feats amount what was the explanation of these strange endurances. The secretary confessed absolute ignorance.

"These semi-savages," he said, "know from centuries back secrets of nature which are sealed mysteries to us. They hypnotize themselves by perfumes and music to a point where neither venomous snakes nor deadly weapons can touch their lives; when they are wounded they can cure themselves in a few moments by methods which entirely escape our understanding. They themselves cannot explain what they do; with them it is simply the exercise of traditional knowledge based on a secret Oriental religion."

FOUND THE LOST PASS. Rediscovery of a Practicable Route Acress the

Southern Andes. More than 100 years ago, Father Menendez, while travelling among the mountains in the northern part of Patagonia, discovered a pass tain strange intensity, like work that might through which, he said, a practicable wagon case is it artistically good. In fact, the spirits through all the mountain ranges to Take Nahuel Trapi, by far the argest lake in the southspoil a really good artist when they get hold of ern port of South America, and on to the Atcean. It became known as the Barass. In these days it was thought good would ever come out of Patagonia. aw explorers or other white men viss region and Father Menendez's disthough utilized for a time, was almost with pride at the Musée Spirite worthless work for the till some twenty years ago when which, he is persuaded, he executed under ranco den began to move down to the neighborhood of Lake Nahuel Huapi and found took to dabbling in spiritualism he would have the grass was good and other crops might be looked upon the feeble things with utter con- raised. Then citizen of Chili and Argentina began to look around for this pass in the moun-

The description which the pioneer priest Diss Debar. M. Desmoulins is more fortunate | had given of his important discovery was. unfortunately; very vague and painfully lackthan Mr. Marsh, in that he gets his spirit pictures without the ald of his check book, but ing in detail: and hunting for the rass in that rough and tangled mountain region was a good deal like looking for a needle in a hay stack. Finally the official explorers whom Argentina and Chili have long kept in the field. began to take a hand in the search. They used their utmost care, but all in vain until this late day, when the long-sought-for pass has at last been discovered and traced by the Chilian engineer Capt. Barrios.

Petermann's Mittetlungen prints a list of all the valleys of big rivers and their little tributaries through which this comparatively lowlying and tortuous route runs from the Pacific Ocean to the big lake of Patagonia. It is not worth while to reproduce them here and most of them are the names of valleys that have not yet appeared on any of our maps. One or another explorer has struck the route in a part of its course, but, somehow, has never succeeded in connecting it with the other parts for any great distance. But there is no doubt whatever, that the route which Father Menendez and some of his successors followed has been rediscovered in its entirety. Here and there are found traces of the old path and there are many blazed trees which the original discoverer is believed to have marked.

THE WEEK AT SMITH COLLEGE. Students Decide to Vote on Election Day-Ern

est Seton Thompson Scores. SMITH COLLEGE, Mass., Oct. 26.-At the mee ing of the Students' Council to-day it was de-cided to take a voic of the college on election day, using the Australian ballot. Students will register for voting in a few days. The Students' Council consists of ten students comprising the president of each class and in addition three from the senior two from the junior and one from the second class. It was organized

HOW ARE THEY TO BE CONSTRUCTED | photography. AND MOUNTED?

Limits Indicated Rather by the Cost of Installation Than by Size - The Paris Telescope of 1900 - Where Telescopes Should He Placed to He of Most Use. The British Association for the Advanceent of Science has lately instituted a separate

department of astronomy, which, until this ear, was associated with physics. At the last meeting of the association an address was delivered before the newly formed department of astronomy by its presiding officer, A. A. Common, himself an amateur bserver of ability, best known, however, as the maker of several large reflecting telescopes. One of these is the three-foot reflector now at the Lick Observatory, which, in the hands of the late Prof. Keeler, has done such brilliant work in the photography of nebula, and another is the five-foot reflector mounted in Mr. ommon's private observatory in London, where its powers are somewhat handicapped by the wretched climate.

Mr. Common has taken for the subject of his address the progress of astronomy since the year 1831, when the British Association was founded, and devotes especial attention to the development of the telescope during the years. a topic which he is especially well fitted to treat. It is proposed to give some account of this very interesting subject, taking Mr. Common's address as a text, without following his remarks with exactness.

About the year 1830 there were few observatories in England and none at all in America. Sir William Herschel had made reflecting telcscopes of great excellence and large size-his largest had a mirror of four feet in diameter and his extraordinary discoveries of the planet Uranus (1781), of two satellites to Uranus (1787), of two satellites to Saturn (1789), of revolving double stars, of thousands of nebulæ, had made the reflector famous. The reflectors of those days were provided with mirrors cast from speculum metal. The mirror got the proper parabolic shape by the very process used to produce the necessary polish to its reflecting surface. When the surface tarnished, as it was sure to do in time, the mirror had to be repolished and in the process its parabolic figure was lost and had to be again established-Thus, in effect, a new mirror had to be made every time that an old mirror was repoushed and this reworking required several days. The famous three-foot and six-foot mirrors of Lord Rosse were of speculum metal and were sub-ject to these hard conditions. Modern reflectors are made in a very different fashion. They are formed out of blocks of glass and then overed with a very thin coating of quicksilver The glass is ground to shape once for When it is once figured it remains in shape forever. Its coating of quicksilver can be replaced whenever it becomes tarnished, and it is a matter of a few hours only to renew the quicksilver film. The saving in time, and especially in the labor of the skilled optician is immense.

In Herschel's day it was impossible to employ he silver-on-glass process. Blocks of glass of the proper thickness, three feet in diameter or more, could not be obtained. It was not intil glass manufacture had reached great excellence about 1850 that the material for large reflectors could be obtained, and it was not until Liebig had discovered his method silvering glass surfaces that the coating of quicksilver could be applied. In this respect, as in many others, science waits upon the arts. having in the first instance suggested the procsaes which the arts have successfully followed. The difficulty in procuring optical glass in blocks of sufficient size hindered the development of the refracting telescope also. In the year 1824 the largest refracting telescope had an object glass about five inches in diameter. It was with this instrument that Sir John Herschel, son of Sir William, made his series of observations of double stars. As the art of glassmaking was improved science felt the benefits. In the year 1824, also, a nine-inch refractor was mounted at the observatory of Dorpat in Russia, a 15-inch was provided for the Imperial Russian observatory at Pulkowa in 1844 and soon afterward one of the same size was mounted at the observatory of Harvard College (1847). Since that time large refractors have followed in quick succession, and it is source of pride to Americans to remember that the best of them have come from American workshops. The Chicago refractor with which the companion to Sirius was discovered has an aperture of eighteen and a half inches, and it was made by Alvan Clark in 1860. The Princeton telescope is twenty-three inches in aperture, that of Washington is twenty-six inches: the Clark telescope at Pulkowa is thirty inches: the Lick telescope is thirty-six inches; that of the Yerkes observatory in Chicago,

the largest of its kind, is forty inches. The question arises whether the limit has been reached, and the answer must be that still larger telescopes will, no doubt, be made, but that we are certainly near to the limit-and this for various reasons, some of which will be considered below. The great reflecting telescopes of the world have all been made in Europe. Only one of them . (Common's three-foot mirror) is mounted in America. Paris and Melbourne nave four-foot reflectors; Mr. Common has a five-foot; Lord Rosse's great reflector (now little used) has a six-foot speculum. Telescopes of the kinds just mentioned are mounted on stands of complex construction, and to be truly effective they must be covered by revolving domes. The dome of the Lick telescope is about seventy-five feet in diameter and cost some \$60,000. The mounting for this telescope ost about \$40,000 The elevating platform (sixty feet in diameter) that I rings the observer o the eye end of the telescope cost another \$10,000. Before the object glass diself costing \$50,000) can be made effective complex apparatus, valued at about \$110,000, must be proided. With every increase of size the cost of the subsidiary apparatus increases—and it in-creases very rapidly. If the size of a dome is doubled its cost is increased not twice but six

or eight times One lesson emerges directly from these considerations. It is folly to place such expensive instruments at sites where the atmospheric onditions are not favorable Mr. Common's three-foot reflector mounted, as it is, on Mount Hamilton, in a perfect atmosphere, is infinitely more effective than it was in England. The great refractor has done far more service at the Lick observatory than if it had been situated at New York, Boston or Chicago. Whenever a great telescope is built it s hould then be placed at a station favored by atmospheric

conditions. There are other ways of mounting and using arge telescopes. The function of the equatorial mounting is to enable the observer to direct his telescope to a star in the east, say, and to enable him to follow it in its diurnal course oward the west-from rising toward setting To this end the telescope tube is driven by a clockwork from east toward west just at the rate at which a star moves in its diurnal course just at the rate, then, at which the earth turns on its axis. The point is to insure that the rays from a star, wherever it may be, shall enter the object glass and be delivered at the other end of the tube, where the observer's eye is placed. In the ordinary mounting this is effected by noving the whole telescope so that the tube shall always point at the star.

If the tube, however, is always fixed in one and the same position (horizontal, for instance), the rays from any and every star can be delivered into this fixed tube in another way. They can be reflected into it from a large flat mirror placed anywhere in front of the object glass and caused to revolve by a clockwork Such a mounting is very simple compared to the complex dome, &c. employed at most observatories. The horizontal telescope it-self can be covered by a mere shed. The fiat mirror, while expensive, does not compare in cost with the ordinary apparatus. The rays from any and every star can thus be brought to the observer's eye. The telescope itself can be made as large and as long as we please, and mere length is often a great ad-

FUTURE GREAT TELESCOPES | vantage, for long telescopes give large images of the sun, the moon, &c. It is often important to have a large primary image, especially in

At first sight the plan just described, which is the plan on which the great telescope of the Paris Exposition of 1900 is mounted, seems to be all that could be desired. The object glass of the Paris horizontal telescope is more than four feet in diameter and the tube is 188 feet in length. It would be almost impracticable to house such an instrument in a revolving dome some two hundred feet in diameter and to mount it in the ordinary fashlon. At any rate the expense of doing so would be enormous. A modification of the Paris plan is advocated by Mr. Common. He would have the large telescopes of the future very large, very long and fixed in position and he would direct the rays from planets and stars into their object glasses by flat mirrors moved by clockwork. For many purposes such an arrangement would be most useful and effective. especially, as has been said. in photographic work, where the advantage of a large primary image is very great. Such a telescope mounted in a suitable situation would have an immense work before it and would at once produce results of great importance. The accounts that we have so far from the great telescope of Paris are disappointing. Little has come from the much heralded arrangement, as was indeed expected by all those who know from experience how dependent a very large telescope is for its effective working upon suitable atmospheric conditions. If the Paris telescope had been mounted at the Lick observaory, or at the Arequipa station of the Harvard College observatory, results of imporance would have been obtained at once.

The very finest results cannot, in the opinion the writer, ever be expected from telescopes ounted in this manner. The interposition of a polished mirror, which, after all, is nothing ut a surface covered with fine scratches and thus diffusing and scattering the incident light between the planet and the object glasswill never allow the latter to perform its very best work. The field of view will always be. to some extent, filled with scattered light, and fine details, like the canals on Mars, for instance, will be tant soit peu, obliterated. This judgment is not a mere opinion, but it is based on experiments made with a very fine Clark telescope used in connection with a mirror in 1882. The performance of mirror and telescope toether was distinctly inferior to that of the elescope used alone.

While the very finest work must be looked r from telescopes mounted in the usual fashn and pointed directly at the object examined, there is, as has been said, a vast field yet uncupled that can be covered by telescopes ounted as Mr. Common suggests. The great ost of domes, moving floors, mountings and ther apparatus will limit the size of the great elescopes of the future unless they are nounted in the new fashion. Even so, their usefulness will be much diminished if a suitable site for them is not chosen beforehand.

EDWARD S. HOLDEN.

TUNING A PIPE ORGAN. It Takes Two or Three Days and Is a Nerve Trying Job.

"The misuse which many pipe organs suffer s a wonder to me," said a veteran organ tuner and builder "Church organs cost from \$1,000 \$10,000. They are very sensitive to changes temperature and yet many are heated and hilled once a week all winter and allowed to get damp soaked in summer. The same people who neglect an organ will take good care of plane costing a tenth or twentieth as much.

"An organ is a good deal like a human being then it comes to changes of the thermometer. Sudden drops put a man out of tune and it's the same with the instrument. It needs an even, moderate temperature during the winter instead of a roasting on Sunday and a freeze the rest of the week. In summer a stone or brick church gets damp. A slight fire once a week will keep the organ dry.

"A pipe organ requires tuning at least once a year and the best instruments are looked over two or three times in that period. It is a two or three days' job and needs two men Besides the tuner up in the organ an assistant must be at the keyboard to hold down the keys. Temperature has to be considered even in tuning. All the pipes must be brought to pitch at about the same degree and this degree.

tuning. All the pipes must be brought to pitch at about the same degree and this degree, should be that which the organ usually has when in use.

"I believe that pipe organ tuning is the most nervous work one can tackle. In fact, after long experience I have come to believe that I tune with my nerves. No, I don't refer to the nerves of heating. I get my impressions that way, but I tune with my nervous system. My assistant strikes a chord. If it is not true I feel a nervous stress and strain. As soon as the chord is true my nerves become harmonious too. It sounds funny, but it's so.

"Two or three days may seem like a long time to take to tune an organ, but when you stop to think of the 1,700 pipes in a large modern instrument it isn't so long. A large organ will have a compass of five octaves or sixtyone keys. These instruments have twenty-eight registers and a pipe to each key and register brings the number to 1,708. Not every key and register has a pine, but as some have two it amounts to that. The pipes are of all sorts and sizes, most of them wood but many of metal. A small number of the large and long wooden pipes never get out of tune. They are too long. For many years the fancy pipes at the front of an organ were only ornamental, but nowadays these sound as well.

"If the that pipe tuning ha a mystery to most people. They can understand how the piano strings are tightened and loosened. But changes in the pitch of pipes queer them. It isn't strange either, for the average organ has five kinds of tuning. Of course, the pitch may be raised by shortening the pipe or by stopping the open end A number of the wooden pipes are stopped by wooden tuned by moving the sides up or down. Other woods have set in the top a piece of metal which is rolled or bent over partially to stop the pipe. The bitch may be raised by shortening the pipe of the top of the pipe. Another kind of pipes, the reeds, are on a different principle. The length of the reed controls the pitch. A wire presses tightly against the reed and is moved

C. CLIFFORD JAMES, COLORED. The Present Appearance of a Young Negro Who Tried to Make His Face White.

From the Baltimore American. If you meet Charles Clifford James any-where about town—he is not an Indian. He is Charles Clifford James, colored, but many who have seen him since Thursday afternoon, and these have been as few as Charles could arrange, have mistaken him for a redskin, just escaped from some reservation. Charles s a redskin, so far as that goes toward determining his ethnological classification, but only temporarily so, and how this came about

Charles Clifford came to Baltimore in makes the story.

Charles Clifford came to Baltimore in recent days to become a porter in a wholesale drug store. He came from Anne Arundel, and in addition to being tolerably black was remarkably green, so that with the final acquisition of red he is rapidly becoming an animated spectrum. The employees of the concern where Charles has thrown his fortunes have been having a great amount of amusement at the expense of the newcomer, all of which has been taken seriously or good naturedly by tharles. The colored boy has among other things been reguled with stories that among other strange mixtures in the place there was one sort that if applied as a lotion would change his tolerably black skin to an undetectable Caucasian hue. Charles took this tale seriously, and persisted in inquirles as to which of the many compounds could work so wondrous a change. One fellowemployee, more facetious than the rest, pointed out a brilliant red compound that would do the work. Charles, it seems, waited a favorable opportunity, then mixed a bucketful of the annointer, and, to save time, dipped his head far into its brilliant depths.

The mixture, fortunately, was a harmless one, and served merely to dye the lad a grotesque Indian hue, though a triffe more florid than the average redskin is made to be—rather like the creation of the ten-cent novelist than the ladian of reality. Since then heroic efforts have been made to make Charles black again, with only partial success, particularly in regard to his hair. The employees of the

forts have been made to make Charles black again, with only partial success, particularly in regard to his hair. The employees of the establishment are paying the boy to remain away for a few days on a plea of sickness until he looks like himself again, for fear that the firm will have an accounting for a waste of coloring and for practical joking that might have turned out seriously.

Remember This-

When an advertiser has something of real value to dispose of, he first goes to THE SUN'S advertising columns with it. Rarely is he compelled to try jur-ther....46

OBSERVERS SAY THE VOLCANO WILL SOON BE IN ERUPTION AGAIN. They Do Not Predict as to the Violence of the Coming Outbreak, but There Are Signs That it May Be Severe-Previous Explosions of the Most Noted of All Volcanoes.

The committee of scientific men appointed to investigate the matter has announced that an eruption of Mount Vesuvius is to be expected soon. It has been some time since there has been a dangerous outbreak of the volcano and no prophecies are made as to the probable force of the one that is now predicted. The observatory at the base of the mountain enables the scientific experts to tell what the condition of the interior of the crater may be and the premonitory signs of an explosion are unfailingly indicated by means of the delicate instruments invented to mark the phases of the volcano. The observatory has now existed for sixty-one years and the predictions of past explosions have always been verified. Nowadays the explosions of Mount Vesuvius are not accompanied with the disastrous consequences they were usually supposed to bring, and this is in a large measure the result of the preliminary knowledge that the volcano is about to burst forth. There have been losses of life in the later explosions. but they were generally due to sudden accidents, such as the flow of lava, which killed ten persons at the outbreak in the early seventies, At that time, from the report of the professors in the observatory, the inhabitants of Naples and other nearby cities knew that the eruption was coming, and that it would be possible for them to go up to the top of the mountain and view the outbreak. Ten persons who had taken advantage of this opportunity were en gulfed in an unexpected outpour of lava and died a horrible death

Mount Vesuvius is the eastern extremity of a chain of volcances that reaches to the island of Ischia. It is eight miles from Naples, on the eastern shore of the bay, which is thought to have been at one time the great crater of a volcano, and before the Christian era Its voicanic activities were confined chiefly to the is more than thirty miles in circumference, and to the base of the cone the ascent is about 2,300 feet. The height of the summit varies it accordance with the condition of the volcano Its maximum, taken after an eruption, was 1.253 feet. The valley, Atrio del Cavallo, separates the two cones by a distance of 700 feet. The mountain has two peaks called Somma

and Vesuvius at the present time, although there is ground for the belief that in ancient times it had but one. This took the form of a truncated cone with an uninterrupted outline. The present cone is thought to have been formed by the eruntion of 79 A. D. Although eruptions took place in 203, 472, 518, 685 and 993, it was not until 1036 that a flow of lava is reported. Then it flowed down to the sea. Formerly only ashes and scorize had been ejected and in the eruption of 472, the ashes were carried as far as Constantinople and to Tripoli. The mountain has significantly increased in size during the past century and a half, chiefly by means of the lava which is so frequently ejected. Some of these lavas are so liquid in character hat they flow readily down the sides of the untain into the sea, while others only move an inch or two forward during several years. When the lava flows slowly down, as it did in 1858, it becomes wrinkled and folded or twisted like topes on the chilled surface from the effects of the warm lava underneath. When it rolls down quickly, as in 1872, after that noted explosion, it is broken into great edges of the appearance and character of cinders. The greatest flow of lava ever noticed in any of the eruptions came in 1794, when the stream that flowed down the mountain was estimated to contain more than 46,000,000 cubic feet of lava and reached to the sea in a mass fifteen feet high and 1,204 feet wide. It can readily be seen how destructive such a phenomenon would be

Eruptions in the present century have been

those of 1804, 1805, 1909, 1812, 1813, 1817, 1820, 1822,

1828, 1831, 1834, 1838, 1841, 1845, 1847, 1849, 1850,

1855, 1858, 1861, 1865, 1868 and 1872. The explo-

For nearly 1,500 years after the historie

eruption of 79 which destroyed Herculan-

ion in 1822 broke up the top of the mountain.

eum, Pompeli, and Stabiae, Mount Vesuvius was comparatively inactive. The historians particulars are given, and by the end of the seventeenth century the mountain had of Pliny before the eruption of 79. The walls of the crater, five mi'es in circumference. were overgrown with trees and vines, and at grazed. The central tract was a lower plain covered with loose ashes and dotted with pools of hot, salty water. The eruption of 1631 was the more unexpected as it was thought that no danger was to be anticipated from a mountain thus covered with foliage and affording pasturage to the flocks of the shepherds who lived on its slopes. It began on Dec. 16, and had been preceded by earthquakes recurring in termittently during the preceding six months. The violent volcania outburst came on unexpectedly, as the instruments now kept in the observatory to tell the condition of the volcano were, of course, not at that time in existence. The eruption continued until February, 1832. During this violent and continued outburst the cone lost so much of its height that it was 1,500 feet lower than Somma. Great clouds of dust and some were belehed from the crater and some of these were carried, so strong was the force of the eruption, as far as Constantinople and fell into the Adriatic. The clouds of steam that constantly flowed up from the crater condensed and formed, with the dust, hot and muddy streams that flowed down the sides of the mountain. The flow of lava that came from the open fissures in the mountain ran into the sea at thirteen different points. This eruption nearly destroyed the towns of Torre del Annunziata, Torre del Greco, Resina and Porticl, and in spite of the warnings of the earthquakes 18,000 persons lost their lives through it The mountain has never been entirely quiet since that outbreak. It has from time to time broken into eruptions, emitting steam, dust and scorise, and less frequently lava. The eruption of 1779 was one of the grandest in the history of the mountain. Great clouds of white vapor floated above the crater, and into this were thrown pieces of stone, flery matter and masses of molten rock. Torre del Greco, at the foot of the volcano, which had been rebuilt after the eruption of 1631, was again destroyed in 1794 by the flow of lava from the mountain at that time. The new crater formed by the explosion of 1822, which continued throughout almost the whole month of October, is three miles in circumference and about 1,000 feet deep. In 1855 there was an eruption that | nearly surrounded with lava some of the dwellings near the base of the mountain. The explosion in 1861 was very violent, but continued for only seven hours. It again overwhelmed Torre del Greco, but as the weather was extremely cold the lava soon cooled and less damage was done than had been expected. In the middle of November, 1867, a cone about seventy feet in diameter, formed within the large crater during the two preceding years, poured out a great flow of lava. Besides the principal flow from the big crater there was a stream from an outside orifice twenty feet in diameter, and these rapidly rolled down the mountain. The crater also constantly projected into the air huge stones. This eruption continued until January, 1868. It was on April 24, 1872, that the next great outbreak came. It had been preceded by warning premonitions, and its greatest force contin-

ued from the first outbreak for two days after. The seismograph in the observatory had begun to show signs of agitation as early as 1871, and Prof. Palmieri, in charge of the obser vatory, predicted an eruption. Cones formed during the year and in the beginning of 1872. At

VESUVIUS IS THREATENING. | sweated fire." From the time the manifestations began crowds of spectators came up from Naples and the other towns to witness the won ders of the explosion every night. The observatory stood between two flery torrents so ho that the glass windows broke. The unfortunates who perished were submerged in a flow of lava 1,000 feet wide that burst from a rent in the cone and overtook them in the Atrio del Cavallo. The damage to villages and crops in

the region was more than \$1,000,000. If the force of the eruptions at this time had not abated when it did, the flow of lava would have threatened the safety of Naples itself. The lava streams on this occasion gave off volumes of smoke, which made them look like small volcanoes as they poured down. Heavy rain-fell from the condensation of the steam pouring out of the crater, and the electric disturbances caused the skies to flash with lightning. One phenomenon of this cruption was the projectiles hurled through the air with great force from the crater. The streets of Naples were covered to a depth of several inches with black sand. Many persons fled from their houses, others remained only because they knew that Prof. Palmieri was still in the observatory.

The observatory on Mount Vesuvius was ounded by Ferdinand II. In 1841, and put under the charge of the famous thysicist. Prof. Meloni. He was succeeded by Prof. Luigi Palmieri. He was also a professor at the Unit versity of Naples Prof. Palmieri has had in the meteorological observatory on Vesuvius the opportunity to test the disturbances and their luses with the greatest accuracy, as the institution is supplied with the most delicate instru ments. This is his theory as to the approach ing eruption of Vesuvius:

"When the central crater begins to heave with slight eruptions, one may always predict a series of slight convulsions of greater or less duration which are preparatory to the grand explosion, after which the volcano remains for the most part in repose."

HONORING A GEOGRAPHER.

Payer's Bad Inck in Naming Geographical Objects After Dr. Petermann.

Lieut, Julius Payer of the Austrian-Hun garlan Army, who with Lieut Carl Weyprecht of that country's navy made Franz Josef Land known to the world, was a great admirer of the famous German geographer, Dr. A. Petermann. Petermann was an enthusiastic supporter of Arctic exploration and it was through reading his writings on this subject that Payer list became interested in polar researches and determined to engage in the work that made his name well known. It was therefore natural that Payer should attach the name of the German geographer to two of the discoveries he eported which were regarded as among the ost important features of his work.

When Payer went to the coast of East Greenand in 1870 with Koldeway on the steamer ermania the most important discovery they nade was Franz Josef Fiord and the mountain hat stands near its head. Payer described the magnificance of the flord which he said was a combination of "hugh walls, deep eroster fissures, wild peaks, mighty crevassed glaciers, raging torrents and waterfalls." It happened to be the warmest of Arctic summer weather and Paver related that the sailors, overcome by the heat, fell into a lethargic sleep from thich it was difficult to arouse them. Payer named the pyramidal mountain rising near its western end Mount Petermann, and it has ong been supposed to be the highest mountain in Greenland. His first determination of its height was 14,000 feet, but his later survey gave 12,406 feet. As it rises from sea level its whole neight comes into view and it is, or course, a ery impressive object from the water But Payer made a fatal blunder in his calcu-

But Payer made a fatal blunder in his calculations. As he stood on Payer Point, far to the east, he took the angle to the top of the mountain and estimated the distance to the mountain top. This estimate was very erroneous and the result was that his determination of the height was greatly exaggerated. These facts were discovered by Dr. Nathorst last year, and according to this high authority the height of the summit is between \$200 and \$0,000 feet above sea level. Thus the mountain can no longer be called the highest mountain in Greenland, though its height is not yet exactly determined; and this natural monument to the great explorer is not quite so conspicuous as it was thought to be.

and in fact does not take of the Duke of the Abruzzi on his explorations in Franz Josef Land confirms the fact, hitherto suspected, that King Oscar Land and Petermann Land do not exist. In the spring of 1874 Payer stood on Cape Fligely, which long remained the highest land ever attained in the Old World. To the far west and north he saw what he thought were blue mountain ranges indicating musses of land. He named those to the west King Oscar Land and those to the north Petermann Land. There is nothing to do now but to expunge them from the maps. Similar blunders have more than once been made in polar lands. Probably the deceptive appearances that Payer saw were nothing more than lines of icebergs. nore than lines of feebergs.

UNCLE SAM TEACHING FORESTRY. Sixty Students Under Government Instruc-

tion During the Past Summer. Sixty stalwart students have taken up forestry as a profession under the instruction of the Division of Forestry of the Department of Agriculture. They have been at work in the forests of various States during the past summer, under the supervision of trained foresters, with results of marked value to the division, chiefly in the preparation of working

sommer, under the supervision of trained foresters, with results of marked value to the division, chiefly in the preparation of working plans and the study of commercial trees. The students, while living in the himber camps, set a certain amount of fishing and huntime, but the line between work and play is closely drawn. All expenses are defrayed by the Government while the men are in the field. During the past summer, work has been done in the Addrondseks, the State of Washington and in Maine. The ultimate object is to prepare the students for service it. The Foresty Division of the United States (vernment Aside from the demand created for trained foresters by the newly awakened entities; and the designation of the torests of the United States, the call for experts in the profession is comparatively reliable, but is increasing with marker against the state of th

during the year and in the beginning of 1872. At this eruption ten persons, who had come to the top of the mountain to see the beauties of the disturbance, were swept under the stream of lava that suddenly broke out from different parts of the mountain. Even the base broke open on this occasion, and the eruption was visible at so many points that Palmieri described the situation in these words: "Yesuvius" species, chiefly for cord wood, are made in the portions of the tract nearest the market, and a certain amount of planting is done every year. Mr. Pinchot says that a great deal of the work being done at Biltmore would not be practical on many other large tracts, managed solely for profit, in other sections of the country. The systematic management of forests for practical lumbermen will be more along the lines practiced on the Webb and Whitney tracts, in the Adrondacks, both of which well lumbered under the stream of the tract nearest the market, and a certain amount of planting is done every year. Mr. Pinchot says that a great deal of the work being done at Biltmore would not be practical on many other large tracts, managed solely for profit, in other sections of the country. The systematic management of forests, in the Adrondacks, both of which well lumbered under the stream of the tract nearest the market, and a certain amount of planting is done every year. Mr. Pinchot says that a great deal of the work being done at Biltmore would not be practical on many other large tracts.

AERIAL NAVIGATION NEAR

COUNT ZEPPELIN'S SUCCESS GIVES NEW HOPE.

Iwo Satisfactory Tests of His Big Airship

Show More Progress Than Was Looked For -He Has Worked Along the Same Lines for Thirty Years-Plans for the Future. Since the first balloon trip was made the great problem of aeronautics has been to achieve that same control cy ; a ship of the air that the saflor has over the ship in the water. The probem was twofold; it required the achievement of propulsion and of direction. In the aggregate millions of dollars, hundreds of years, and scores of lives have been devoted to the solution. From time to time announcement has been triumphantly made of an airship that could be steered, but a single trial of the conrivance has ended in failure at the best or disister at the worst. Of Inte investigators have turned from the idea of the balloon to that of he souring apparatus, seeking to imitate the bird rather than the steamship in their efforts to navigate the air; but one student of aeronautics steadfastly held to the line of the gas airship and now, in the closing year of the nineteenth century, Count Zeppelin announces to the world that the dirigible airship is a demonstrated fact.

Two successful flights form the basis of Count Zeppelin's assertion which is universally ac cepted since his most recent experiment on Oct. 17 at Friedrichshafen, a German - town on Lake Constance. In each he demonstrated that his airship could be raised, lowered and steered in any direction at will while carrying five passengers. This amounts, broadly speaking, to this: that the first step forward has been made in aerial navigation since the flight of the first bald oon. At the beginning of ballooning it was shown that the great gas bulb could be raised or lowered to some extent in accordance with the will of the operator. In all the years since no man has succeeded in controlling its lateral novements or overcoming the pressure of the air currents until the German Count built his huge craft. What remains of the problem now s simply a matter of mechanical ingenuity-to lighten the structure of the airship while preserving its strength, and to increase the motive power without adding materially to the weight f the engines. More time, thought, endeavor and money

have been put into the Zoppelin airship than nto any previous enterprise of aerial navigation. t is thirty years since Count Zeppelin, an offier in the German Army, first turned his attention to it as an engine of war which should render the nation in possession of it irresistible ov enabling its officers to scout without fear of he enemy's fire. From that time up to the present he has been at work with little internission upon his great idea, spending his wealth lavishly in experiments which were, for the most part, failures; but failures of the kind that lead to success. His onstant endeavor was to find a structure which should be light, yet firm, and properly balanced, and to supply it without much added weight with motors capable of driving it through the air. He long ago made up his nind that to be of practical value his airship must be able to attain a speed of more than afteen miles an hour, since the currents in the apper regions of the air, where he proposes to perate, are so often of that or greater velocity at a contrivance unable to withstand them would be uscless. In the meantime he did not take the world into his confidence, and the many aëronauts in various parts of the world who, like Hargrave of Australia, Chanute of this country and the ill-fated Lilienthal of Germany, were following the line of soaring flight by means of aeroplanes were inclined to look on him as a visionary who would only add one more to the already long list of failures. It was not until two or three years ago that

the world heard about Count Zeppelin's airship. Then what it heard was not definite; being the general information that the biggest balloon ever built was nearing completion in a boathouse on Lake Constance, a ballcon bigger than a man-of-war. On July 1 of this year such of the public as chanced to be in the vicinity of Lake Constance or had come thither in expectation of the event had opportunity of verbught to be.
But the other case is worse yet, for the supsed bit of earth, that was also named by
yer after the geographer, cannot be found
d in fact does not exist. The official report
the Duke of the Abruzzi on his explorations
the Duke of the Abruzzi on his explorations frying the various rumors about the so-called except at the tapering ends. At the sides were propeliers and at each end big, fin-like pretuberances which were to serve as rudders. It was not like any balloon that any of the spectators had ever before seen, and, indeed, it was not strictly speaking a balloon, but a series of balloons, seventeen of them in all, inclosed in a frame of aluminum trellis work. That day no flight was attempted on account of the wind. On the evening of the following day the airship made the first really successful air trip on

record. Released from the cables that anchored it to the barges it rose quietly and so steadily that the swiftness of its flight was hardly anpreciable to the thousands who watched it. When it had reached an altitude of between twelve and thirteen hundred feet its upward progress was checked, for that is the air stratum in which it is expected that most of the travelling will be done. Then the manœuvres began. Beneath the body of the balloon hung two aluminum cars, one about one hundred ventor and two companions; the other about an

had seen it on its initial trip declared that its travelled at a faster rate of speed and answered its rudders and altitude shifting weight more promptly on this occasion than before.

Count Zeppelin is said to have expressed a belief that a few improvements will render his whip capable of a speed of thirty miles an hour. In spite of the fact that he is over 70 years old and has spent thirty years of hard work on his invention, he intends to continue the work with unabated vigor. He con iders the problem of aerial navigation solved, but there must be a great advance in construction along the lines he has laid down before the airship can become a ship of commerce.